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THE INSECT PEST SURVEY  
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## THE MORE IMPORTANT RECORDS FOR JANUARY AND FEBRUARY

The unseasonably warm weather of January and February in the Southeastern States stimulated insect activity. The outstanding development was the outbreak of the green bug, which centered in Georgia and occurred also in South Carolina and Alabama; however, the effect of the sudden cold weather of the last of February was being felt in some locations and may check the outbreak.

Such insects as the cabbage butterflies and noctuid moths were observed in flight. The development of the Monarch butterfly from egg to pupa was reported from Florida January 16.

Counts of samples of hibernating chinch bugs in Tippecanoe County, Ind., showed that 57 percent of the bugs were living on February 1. A high percentage of the chinch bugs in Illinois were alive the middle of January.

Reports from New Hampshire, Pennsylvania, and Virginia, indicate that eggs of fruit aphids are scarce.

Eggs of the eastern tent caterpillar were reported as hatching the third week in February in the extreme southern part of the Hudson Valley in New York.

The San Jose scale is passing the winter successfully in central and southern Illinois, from 24 to 60 percent of the scale being alive. In Idaho, however, 100 percent mortality occurred above the snowline, where counts have been made.

The plum curculio is keeping pace with the early blooming of peach trees at Fort Valley. An adult was jarred from the trees on February 8, the earliest record of such occurrence.

Reports from California show no marked effect of the unusual cold weather on scale insects on citrus.

The vegetable weevil is occurring in abundance from Charleston, S. C., in the East, around the Gulf States to Harrison County, Tex., in the West.

The diamondback moth was reported as unusually abundant on cabbage in scattered localities in the Gulf States and on broccoli and cabbage in Texas.

A new infestation of the sweetpotato leaf beetle was discovered in Mobile County, Ala., in December. Although the insect has been reported from central and northern Alabama, this is the first record in the southern part of the State.

The fall cankerworm was reported to be mating on December 13 on Long Island. The moths have also been active in that general section of the country all winter.

Larvae of Parharmonia pini Kellicot were collected on pine in the mountainous section of northern Georgia. They were determined by C. Heinrich, who says: "This is our first record from the far South." G. M. Bentley reported the species from Cumberland County, in eastern Tennessee, on July 16, 1936.



## GENERAL FEEDERS

### GRASSHOPPERS (Acrididae)

- New Hampshire. L. C. Glover (February 25): A report from Portsmouth, Rockingham County, in the southeastern part of the State, says that grasshoppers were hopping about during the third week in February. They were probably of the genus Chorthophaga.
- Indiana. J. J. Davis (February 23): There is every indication that grasshoppers will be abundant in northern and western Indiana and that scattered outbreaks will occur in other parts of the State.
- Illinois. W. P. Flint (February 22): In connection with some of our laboratory work at Urbana this winter, we have been bringing in numbers of grasshopper eggs about every 7 to 10 days. Approximately 80 percent of these eggs have been hatching. They are apparently coming through the winter in very good condition.
- Idaho. C. Wakeland (February 24): Grasshoppers are at a low point in their population cycle in Idaho. From the 1936 survey of adults, outbreaks are not expected in 1937, but in a few localities the populations will be heavier than in 1936 and will be above normal.

### MORMON CRICKET (Anabrus simplex Hald.)

- Idaho. C. Wakeland (February 24): A State-wide egg survey made in the fall of 1936 indicates that approximately 1,326,000 acres of crop and range lands are within the borders of the infested areas in 21 counties and that a minimum of 90,000 acres of land will need to be dusted to obtain commercial control in 1937. While the infested area is probably no greater than it was in 1936, the density of the population is expected to be much greater, especially in counties in the western part of the State.

### SAY'S STINKBUG (Chlorochroa sayi Stal)

- California. C. S. Morley (February 4): We are finding many of the Say's plant bugs hibernating under clumps of Russian-thistle in Kern County. This species caused much damage 2 years ago.

### ARMYWORM (Cirphis unipuncta Haw.)

- Georgia. T. L. Bissell (February 3): Armyworms (C. unipuncta) were found in hibernation under plant debris on February 3, but are not more numerous than they were a year ago.

### BELLA MOTH (Utetheisa bella Comst.)

- Florida. J. R. Watson (February 24): Full-grown larvae of the bella moth have been seen in the Gainesville district.

CUTWORMS (Noctuidae)

Florida. J. R. Watson (February 24): Such insects as cutworms have been unusually common.

MONARCH BUTTERFLY (Danaus menippe Hbn.)

Florida. H. T. Fernald (January 16): Found eggs and larvae up to 1 inch long, feeding freely and saw four chrysalids just completed, from the plants, removed just before pupation. This is, I think, the first record of its breeding at Orlando at this time of year, by actual finding of the early stages, though I have reported taking fresh adults the last of March and first of April.

BUTTERFLIES (Lepidoptera)

Georgia. T. L. Bissell (January 23): Butterflies, species of Pieris and Colias, were in flight on January 23. A specimen, probably Catopsila eubule L., was caught on December 18.

P. M. Gilmer (January 16): Cabbage butterflies are rather common at Tifton.

Tennessee. G. M. Bentley (February 23): A cabbage butterfly and many different species of noctuids were seen in flight this season.

FALL ARMYWORM (Laphygma frugiperda S. & A.)

Georgia. P. M. Gilmer (January 16): L. frugiperda has been rather common at lights during this week at Tifton.

COMMON RED SPIDER (Tetranychus telarius L.)

Pennsylvania. H. F. Dietz (February 10): Red spider (T. telarius L.) has been a serious pest in greenhouses and in the large commercial rose-growing district around Philadelphia.

Mississippi. C. Lyle (February 24): T. telarius was damaging boxwood at McComb on January 27, arborvitae at Vardaman on January 16, and Norway spruce at Jackson early in February.

Louisiana. C. E. Smith (January 27): According to reports from the strawberry-growing district around Hammond, the red spider was abundant in January.

# CEREAL AND FORAGE-CROP INSECTS

## WHEAT

### CHINCH BUG (Blissus leucopterus Say)

Indiana. C. M. Peckard (February 6): Chinch bug abundance in 1/5-square-foot samples of bunch grass taken by C. Benton from November 25 to December 5, 1936, from four northwestern counties of central Indiana was as follows:

County	Samples	Average bugs per square foot	Rating
	Number	Number	(Decker's scale)
Benton - - - - -	23	640	Moderate-abundant
Tippecanoe - - - - -	22	1,115	Very abundant
Clinton - - - - -	25	290	Moderate
Tipton - - - - -	25	65	Scant

Winter mortality of chinch bugs in 1/5-square-foot samples of bunch grasses, including a few timothy samples, taken by Mr. Benton in Tippecanoe County this winter, is shown in the following table. Mortality was about the same in timothy as in bunch grasses.

Date	Samples	Living bugs	Dead bugs
	Number	Number	Number : Percent
November 21 - - -	9	984	11 : 1
December 14 - - -	10	1,155	64 : 5
January 6 - - -	20	2,781	115 : 4
February 1 - - -	20	1,984	1,505 : *43

\*This mortality general in Tippecanoe County.

J. J. Davis (February 23): Unless unfavorable weather appears between now and the time for chinch bugs to migrate to wheat and other small grains, we anticipate trouble on the western border of the State from Lake County on the north to Greene County on the south, and perhaps covering two tiers of counties from the western border.

Illinois. W. P. Flint (February 22): Chinch bugs brought in from hibernation the middle of January have shown a very high percentage of survival. These bugs have laid eggs which are now hatching in the greenhouse.

### GREEN BUG (Toxoptera graminum Rond.)

South Carolina. T. L. Bissell (February 13): A farmer from Bamberg County in the south-central part of the State, says that he has had heavy losses from green bug on oats this winter.

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Alabama. J. M. Robinson (March 1): Green aphids appeared on oats in large numbers in central Alabama, including Lee County.

Georgia. T. L. Bissell (February 22): The most important item this winter has been the outbreak of the green bug on oats and other grains. I have inspected 26 properties in 4 counties in central Georgia -- Spalding, Pike, Lamar, and Monroe -- in which I estimate that 5 percent of the oat crop has been destroyed. At the experiment station in Spalding County plots of wheat and barley have been heavily damaged, but on the nearby farms wheat is untouched. I find that the bugs are still spreading at the experiment station but decreasing on the farms. This is possibly explained by local protection from weather, that is, the cool weather of February seems to have checked the bugs, except possibly where they were protected by woods. The outbreak first came to my attention on January 23 but one farmer noticed it before Christmas.

O. I. Snapp (February 4): The green bug is unusually abundant at Fort Valley, Peach County, and has already caused considerable damage to wheat. Some wheat plants are dead as a result of the severe attack, and large areas in many fields are showing the effects of the feeding of this aphid.

Oklahoma. F. A. Fenton (February 23): In the first week in January we received reports of green bug damage to wheat in Garfield County, in the north-central part of the State. A number of fields showed evidences of severe infestation and in one field visited wheat had been killed in many spots.

#### SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata F.)

Georgia. O. I. Snapp (January 11): The hot weather of recent weeks has brought the 12-spotted cucumber beetle out of hibernation unusually early at Fort Valley. Many were observed on wing today, some of them being on wheat plants.

Louisiana. C. O. Eddy (March 1): Adults have been active and abundant several times during the winter.

#### ALFALFA

##### ALFALFA WEEVIL (Hypera postica Gyll.)

California. A. E. Michelbacher (February 23): On February 16 a survey was made of the alfalfa fields in the northwestern part of the San Joaquin Valley. No larvae or adults of the alfalfa weevil were collected. On January 3, before cold weather set in, a survey was made of alfalfa fields in the San Francisco Bay district. In most fields no larvae or adults of the alfalfa weevil were found, although in one field 12 larvae were collected in 300 sweeps. A second survey was made on February 22. In most fields no larvae or adults were collected. In one field an average of  $1\frac{1}{2}$  alfalfa weevil larvae were collected per 100 sweeps. The surprising thing in this field was that an average of 10 adult Bathyplectes curculionis Thoms. was taken per 100 sweeps. Last year at this time the count of alfalfa weevil larvae ranged from 40 to 500, and the count of adults from 6 to 60.

CLOVER LEAF WEEVIL (Hypera punctata F.)

California. A. E. Michelbacher (February 23): On February 16 a survey was made of alfalfa fields in the northwestern part of the San Joaquin Valley. One clover leaf weevil larva was found. On February 22 about three clover leaf weevil larvae were taken to 100 sweeps in the San Francisco Bay district.

PEA APHID (Illinoia pisi Kalt.)

Georgia. T. L. Bissell (February 22): The pea aphid is common on Austrian winter peas at Experiment but seems to be less abundant than it was in January. In some spots peas that were thickly infested with aphids have died and the aphids must be at least partly responsible.

California. A. E. Michelbacher (February 23): The pea aphid was generally distributed through the alfalfa fields in the San Francisco Bay district on February 22.

COWPEAS

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

Georgia. T. L. Bissell (February 22): Adults of the cowpea curculio are found commonly under dead grass and leaves in last year's pea fields, but no active curculios have been found.

F R U I T I N S E C T S

APPLE

APPLE APHIDS (Aphidae)

New Hampshire. L. C. Glover (February 25): Eggs of the green apple aphid (Aphis pomi DeG.) are scarce on trees in well-cared-for orchards in Durham. They are numerous on some trees in uncared-for orchards.

Pennsylvania. H. E. Hodgkiss (March 2): Aphid eggs are comparatively scarce in apple orchards.

Virginia. W. J. Schoene (February 22): A few examinations indicate that eggs of apple aphids are unusually difficult to find.

CODLING MOTH (Carpocapsa pomonella L.)

Georgia. C. H. Alden (February 23): Larvae still in hibernation but no pupation to date in Habersham County, in northeastern Georgia.

Indiana. J. J. Davis (February 23): Large numbers of codling moths went into winter quarters and we may anticipate a heavy infestation if weather conditions are normal.



EASTERN TENT CATERPILLAR (*Malacosoma americana* F.)

New York. E. P. Felt (February 25): Apple tent caterpillars (*M. americana*) were reported as hatching in small numbers last week at Riverdale just north of New York City. They are somewhat numerous here and there, though less abundant than last year.

SAN JOSE SCALE (*Aspidiotus perniciosus* Comst.)

New Hampshire. L. C. Glover (February 25): The San Jose scale is very scarce in Strafford and Rockingham Counties.

Illinois. W. P. Flint (February 22): C. Chandler has just completed some counts of San Jose scale in southern Illinois, which indicate that from 24 to 53 percent of the scale is surviving in different localities. An examination of scale in central Illinois the latter part of December showed about 60-percent survival. The weather on the whole has been very mild, favoring a high survival of scale.

Georgia. C. H. Alden (February 23): Owing to rainy winter and abnormally early swelling of the buds, many growers failed to apply dormant sprays and, as a result, the scale has not been properly controlled in some peach orchards in Habersham County, in northeastern Georgia.

Idaho. C. Wakeland (February 24): Only a few counts have been made of the conditions of overwintering San Jose scale, but these have shown 100-percent mortality in a community where the minimum temperature reached -30° F. It is probable that survival on bark above snow line will be low throughout the State, as temperatures in nearly all localities where the scale is established were lower than -25°, the temperature which has been found to effect complete kills in other winters.

EUROPEAN RED MITE (*Paratetranychus pilosus* C. & F.)

New Hampshire. L. C. Glover (February 25): The eggs of the European red mite (*P. pilosus*) are numerous on apple trees in Durham, particularly on younger trees.

Pennsylvania. H. E. Hodgkiss (March 2): Eggs of the European red mite are abundant generally over the State.

PEACH

PLUM CURCULIO (*Conotrachelus nemophar* Hbst.)

Georgia. O. I. Snapp (February 8): An adult curculio was caught today by jarring wild plum trees at Fort Valley. Wild plum trees are now in full bloom and peach trees are beginning to bloom, some having half of their blooms fully opened. This is the earliest date on which we have recorded the appearance of adult curculios from hibernation, although annual jarring records have been made for 20 years. We have taken plum curculios heretofore the latter part of February, but never as early as February 8. They usually begin to appear from hibernation in March. The records this year confirm those of other years in that the curculio begins to appear from hibernation when peach trees begin to bloom.

C. H. Alden (February 23): No beetles have emerged from hibernation in Habersham County, in northeastern Georgia.

ORIENTAL FRUIT MOTH (Grapholitha molesta Busck)

Indiana. J. J. Davis (February 23): In areas where there was a peach crop last year the oriental fruit worm is overwintering in rather large numbers.

PEACH BORERS (Conopia spp.)

Alabama. J. M. Robinson (March 1): Peach tree borers (C. exitiosa Say) were sufficiently abundant in central Alabama to require treatment of the trees.

Idaho. C. Walreland (February 24): A very heavy infestation of a peach borer is causing heavy damage to peach, prune, and apricot trees in Gem County. Injury is not just typical for that of C. exitiosa Say, commonly found in southwestern Idaho, as larvae are found abundantly in the trunk and even in the scaffold limbs. The species cannot be determined until adults are reared in the spring.

CHERRY SCALE (Aspidiotus forbesi Johns.)

Virginia. W. J. Schoene (February 22): In one orchard in the Roanoke section a large number of peach trees are rather severely injured by A. forbesi.

TERRAPIN SCALE (Lecanium nigrofasciatum Perg.)

Virginia. W. J. Schoene (February 22): In the Roanoke district we have in one peach orchard an outbreak of the terrapin scale (L. nigrofasciatum).

BLACKBERRY

BLACKBERRY MITE (Eriophyes essigi Hassan)

Washington. A. J. Hanson (February 23): The blackberry mite (E. essigi) is hibernating successfully.

GRAPE

GRAPE LEAFHOPPER (Erythroneura comes Say)

California. C. S. Morley (February 4): Grape leafhoppers are hibernating in Kern County in clumps of Russian-thistle and other weed growth and injury may be quite serious this spring if some winter control is not practiced.

CITRUS

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Florida. J. R. Watson (February 24): There is now a considerable flight, unusual at this time, of the citrus whitefly (D. citri) in Orange and Lake Counties.

Mississippi. C. Lyle (February 24): Complaints and specimens from citrus trees were received from Bay Saint Louis on November 8, Ocean Springs on December 9, and De Lisle on January 6, all in the southern part of the State. Specimens from Cape jasmine were received from Canton in the central part of the State on January 15.

BLACK SCALE (Saissetia oleae Bern.)

California. R. S. Woglum (February 23): Unanimity of observations that the cold weather had not produced any outstanding scale mortality. There appears to be a slight increase of scale mortality on living wood, leaves, or fruit, especially of the smaller stage, owing to the cold and rain, but very little over that normal to any cool, wet winter. Where trees are defoliated, fruit destroyed and branches killed, this means a reduction of scale on the parts affected. As there is a rather large acreage of lemon orchards completely defoliated, with fruit loss and evidence of more or less dead wood, the scale is considerably reduced in such orchards. The acreage of orange or grapefruit orchards in the more scaly districts that have suffered heavy defoliation is comparatively small. Black scale at this time of year is largely on the twigs and branches. No increased mortality of black scale has been noted since the cold weather. Our records of 1922 show that, even in orange trees completely defoliated that year, there was little natural mortality. In fact, the following year there was one of the most severe black scale infestations ever noted in eastern Los Angeles County, and one that required 2 or 3 years to subdue.

CALIFORNIA RED SCALE (Chrysomphalus aurantii Mask.)

California. R. S. Woglum (February 23): Actual counts made since the freeze, of red scale on fruit from certain untreated orchards, in Los Angeles County showed an average of approximately 70 percent of the scale alive on lemons and 60 percent alive on oranges. This is comparable to normal mortality during cool, wet winters. One of the most important influences of the cold weather has been the complete checking of scale development and, in the case of red scale, being put in a condition more susceptible to control by fumigation.

H. J. Ryan (February 9): To such extent as defoliation caused by the freeze does occur, and where fruit loss from red scale in untreated lemon orchards ran 75 percent or more, there will be some decrease in red scale population in Los Angeles County. According to some scale counts, the percentage of red scale mortality now evident is somewhat greater than usual at this time of year. We cannot tell whether this is due to cold weather or to the speeding up of otherwise normal conditions.



FLORIDA RED SCALE (Chrysomphalus aonidum L.)

Florida. J. R. Watson (February 24): Full-grown crawlers of the Florida red scale are to be seen on citrus trees.

PURPLE SCALE (Lepidosaphes beckii Newm.)

Florida. J. R. Watson (February 24): Full-grown crawlers of the purple scale are to be seen on citrus trees.

California. R. S. Woglum (February 23): No marked mortality of purple scale eggs or insects has been noted. Our observations in 1913 and 1922 showed little influence of cold weather on mortality of this pest.

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

Alabama. J. M. Robinson (March 1): The cottony-cushion scale was reported on January 20 as attacking shrubbery at Livingston, Sumter County, in the west-central part of the State.

Mississippi. C. Lyle (December 9): I. purchasi on Satsuma at Pass Christian, in Harrison County, on the Gulf coast.

A TREE BORER (Priorus sp.)

Arizona. D. C. George (January 20): The large grubs of a longhorn borer, probably P. californicus Mots., was found tunneling in the roots of citrus trees and around the crowns at Phoenix. Considerable damage observed in one grove.

CITRUS RUST MITE (Phyllocoptes oleivorus Ashm.)

Florida. J. R. Watson (February 24): Rust mites have been troublesome all winter and much spraying has been done.

CITRUS RED MITE (Paratetranychus citri McG.)

Florida. J. R. Watson (February 24): The purple mite has been numerous on citrus.

## TRUCK - CROP INSECTS

### VEGETABLE WEEVIL (Listroderes obliquus Klug)

- South Carolina. W. J. Reid (February 2): On February 2, larval, pupal, and adult specimens of the vegetable weevil were brought in with the statement that the insect was severely damaging about 25 percent of the plants in a 3-acre planting of carrots in Charleston County. Additional adults appeared among the caged specimens on February 16. The vegetable weevil was first reported from Charleston County in January 1935.
- Florida. F. S. Chamberlin (January 25): Specimens collected on turnips at Quincy, Gadsden County, in north-central Florida. This pest now occurs in abundance in widely separated places in this county.
- Georgia. T. L. Bissell (January 13): A heavy infestation of vegetable weevils has developed at the experiment station in Spalding County, central Georgia. The insect was rare here a year ago. We have found approximately 25 grubs to the square foot in two turnip patches. As yet we find no pupae out of doors, although larvae collected January 13 and brought indoors have become adults.
- Alabama. J. M. Robinson (March 1): The vegetable weevil was very active during the winter and was doing serious damage in the southern and central parts of the State, being reported as far north as Auburn and Lafayette. In many places the turnip foliage and tubers were destroyed. Adults had formed as early as January 22.
- Mississippi. K. L. Cockerham (January 23): The vegetable weevil has appeared in greater numbers and is doing more injury in the vicinity of Biloxi station on the coast this season than for several years. Injury began to show up the latter part of December and has increased throughout January. The infestation has shown rather constant increase up to the present time. On some other truck farms where examinations were made severe injury and heavy populations of larvae were found. On many small turnip plants 8 and 10 larvae were found on single leaves, 21 being counted on 1 leaf. Severe injury has been noted on turnips, carrots, chinese cabbage, and cabbage plants, and some injury on mustard, chinese turnips, rutabaga, and radishes. Many of the larvae hatched first are now in the pre-pupal and pupal stages, although recent examinations revealed many young larvae still present.
- C. Lyle (February 24): The vegetable weevil has been about normally abundant in central Mississippi during the past winter.
- Louisiana. P. K. Harrison (January 27): The heaviest infestation of the vegetable weevil observed in a number of years is reported in the neighborhood of Baton Rouge.
- Texas. P. K. Harrison (January 15): Heavy infestation of the vegetable weevil attacking turnip plants in Harrison County in northeastern Texas. No other plants examined.



FLOWER THRIPS (Frankliniella spp.)

Louisiana. C. O. Eddy (March 1): F. fusca Hinds has been moderately abundant on onions and shallots and present in small numbers on cabbage. F. tritici Fitch is now beginning to build up.

POTATO

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

Washington. A. J. Hanson (February 23): The potato flea beetle (E. cucumeris) becomes a little more serious each season throughout the State. The insect is now a problem from Snohomish County on the north, over southwestern Washington, and into the Willamette Valley of Oregon. East of the Cascade Mountains it has become a problem in the Ellensburg, Kittitas County, district, and in parts of Yakima County. In the Puget Sound district the potato acreage and the number of farmers growing the crop continue to vary.

BEANS

MEXICAN BEAN BEETLE (Epilachna varivestis Muls.)

Colorado. R. L. Wallis (February 24): Examinations of hibernating bean beetles at Grand Junction at weekly intervals during the month of February showed that on the average 13.78 percent of the beetles were alive.

CABBAGE

DIAMONDBACK MOTH (Plutella maculipennis Curt.)

South Carolina. W. J. Reid (February 16): On January 23 approximately full-grown larvae of the cabbage looper (Autographa brassicae Riley) and of the diamondback moth (P. maculipennis Curt.) were found on a midwinter cabbage planting in the vicinity of Charleston. Activity of the worms decreased somewhat during periods of lower temperatures existing during the last few days of January and the early part of February; however, the population of the diamondback moth increased to such an extent by February 16 as to cause severe damage to winter cabbage plantings. There is a probability of more than usual injury to the spring plantings.

Louisiana. C. E. Smith and R. W. Brubaker (January 27): The larvae of the diamondback moth are increasing in abundance around Baton Rouge. At present they are doing more damage to cabbage than any of the common cabbage worms.

Texas. F. L. Thomas (February 24): The diamondback moth (P. maculipennis) and the cabbage looper (A. brassicae) are abundant on cabbage and broccoli in Hidalgo County, in the lower Rio Grande Valley and in Dimmit and Galveston Counties.

CABBAGE LOOPER (Autographa brassicae Riley)

Florida. J. R. Watson (February 24): Cabbage loopers have been unusually common.

Louisiana. C. E. Smith and R. W. Brubaker (January 27): The cabbage looper is not very abundant at Baton Rouge.

CABBAGE WEBWORM (Hellula undalis F.)

Georgia. T. L. Bissell (February 22): Collards and turnips were seriously infested with webworm last fall but are now free from it.

Mississippi. D. W. Grimes (November 25): Specimens of H. undalis were collected at Durant on November 25.

IMPORTED CABBAGE WORM (Ascia rapae L.)

Louisiana. C. E. Smith and R. W. Brubaker (January 27): The imported cabbage worm is increasing in abundance at Baton Rouge. Large numbers of the adults were seen on the wing on January 13 and 20. They are now less numerous.

HARLEQUIN BUG (Murgantia histrionica Hahn)

Texas. F. L. Thomas (February 15): Harlequin cabbage bugs put in their appearance on February 15 in the Winter Garden district of southwestern Texas, attacking cabbage and related crops.

PEAS

PEA MOTH (Laspeyresia nigricana Steph.)

Washington. A. J. Hanson (February 25): The pea moth is hibernating successfully. Twenty thousand cocoons are being held in an outdoor insectary and observations will be made during the emergence period. The cocoons that have been opened recently contain normal larvae.

SQUASH

SQUASH BUG (Anasa tristis Deg.)

California. C. S. Morley (February 4): We are finding a great many squash bugs in Kern County and this insect has caused some damage to cotton, melons, squash, and pumpkin.

### TURNIP

#### TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

Louisiana. P. K. Harrison (January 27): The turnip aphid was present in injurious numbers from October 15 to December 30, 1936, at Baton Rouge. The parasitic fungus Entomophthora aphidis has since greatly reduced the population.

Texas. F. L. Thomas (February 24): Turnip lice appeared on turnips at College Station throughout the winter.

#### STRIPED FLEA BEETLE (Phyllotreta vittata F.)

Louisiana. P. K. Harrison (January 27): This insect is scarce on turnips and mustard in the vicinity of Baton Rouge.

### CELERY

#### CELERY LEAF TIER (Phlyctaenia rubigalis Guen.)

Florida. C. B. Wisecup (February 10): Climatic conditions have been very favorable for the development of this insect at Sanford, in Seminole County, east-central Florida, but due to various counteracting influences, the number present in January is the lowest ever observed at this season since the station was established in 1925.

#### GARDEN FLEA HOPPER (Halticus citri Ashm.)

Florida. C. B. Wisecup (February 10): Numbers not increasing at Sanford but as the celery is harvested the adults are being concentrated in the remaining celery.

### ONIONS

#### ONION THRIPS (Thrips tabaci Lind.)

Florida. C. B. Wisecup (February 10): In years of high temperatures and lack of rainfall this insect is a factor in limiting the quality and quantity of celery at Sanford late in the spring. In January small celery was being severely damaged.

Louisiana. C. O. Eddy (March 1): T. tabaci is present in small numbers on onions.

Texas. F. L. Thomas (February 24): Onion thrips are abundant on onions in Dimmit County, on the Rio Grande.

### CARROT

#### CARROT RUST FLY (Psila rosae F.)

Washington. A. J. Hanson (February 23): The distribution of the carrot rust fly now includes the area from the Canadian border on the north to Lewis County on the south, in the Puget Sound district. The range of distribution of the insect has been extended from the White River Valley to the north and approximately 100 miles south since it was first reported in 1929. The third generation of adults continued to emerge until January 1, that is, specimens maintained in an outdoor insectary.

Washington. R. L. Webster (February 23): This insect has been discovered at Winlock in Lewis County, the most southern record.

SPINACH

BEEF LEAFHOPPER (Eutettix tenellus Bak.)

Texas. F. L. Thomas (February 24): The beet leafhopper appeared only in small numbers during the past winter on spinach in the Winter Garden district of southwestern Texas. The insect is present also in Hidalgo County, in the lower Rio Grande Valley of this State, but is causing only slight injury to spinach.

SWEETPOTATO

SWEETPOTATO LEAF BEETLE (Typophorus viridicyaneus Cr.)

Alabama. K. L. Cockerham (December 10): On December 9 and 10 an investigation was made in Mobile County of an infestation in sweetpotatoes. The insect had been found on five farms growing a little over  $5\frac{1}{2}$  acres of potatoes during the fall. In most cases the injury was reported as not being severe. On one or two farms, however, the damage was rather severe. Approximately 5 bushels of potatoes were destroyed on one farm. On another approximately 3 percent of the potatoes remaining in storage had been damaged by larvae and this grower reported that the part of the crop already consumed had also been injured.

PEPPER

PEPPER WEEVIL (Anthonomus eugenii Cano)

Florida. J. R. Watson (February 24): The few pepper weevils surviving the clean-up campaign of last winter have been increasing in numbers in Manatee County, in west-central Florida.

MUSHROOMS

A FLY (Sciara sexdentata Petty)

North Dakota. J. A. Munro (December 31): Sciariid flies are abundant in a greenhouse mushroom bed at Fargo. (Specimens determined by F. R. Shaw as S. (Neosciara) sexdentata Petty.)

TOBACCO

TOBACCO FLEA BEETLE (Epitrix parvula F.)

South Carolina. N. Allen (February 25): This pest was found feeding on plants in plant beds near Loris on February 25. Weather was unseasonably warm during January, resulting in early germination of tobacco seed and comparatively large plants for this season of the year. The appearance of the tobacco flea beetle is unusually early.



Florida. F. S. Chamberlin (February 25): A few flea beetles are present in tobacco plant beds in Gadsden County, but they have caused no damage of commercial importance.

MOLE CRICKETS (Scapteriscus spp.)

Florida. F. S. Chamberlin (February 25): Mole crickets have caused a small amount of damage in tobacco plant beds in Gadsden County. In January it appeared that considerable damage would be caused, but the cooler weather of February seemed to check the activities of the crickets.

C O T T O N   I N S E C T S

BOLL WEEVIL (Anthonomus grandis Boh.)

Mississippi. C. Lyle (February 24): Inspector D. W. Grimes of Durant reports that the first boll weevils emerging from hibernation cages were found on the screens during a warm period during the first week of February.

(January):

Louisiana. R. C. Gaines and G. L. Smith / Much more boll weevil activity reported in the hibernation cages at Tallulah this January than last year. In 70 comparable cages 1,029 weevils were active in January of this year, whereas only 51 were observed in January 1936. During January 1937 the temperature was below 32° F. only twice, the minimum for the month being 29°, whereas during January 1936 the temperature dropped below 32° on 16 dates with a minimum of 15°. One weevil was caught on the flight screens, as compared to none last year, 12 in January 1935, and 11 in January 1934.

Texas. F. L. Thomas and T. C. Barber (February 24): Boll weevils have been active and breeding throughout the winter in the lower Rio Grande Valley, where cotton has remained green.

R. W. Moreland (January): Reports 221 boll weevils alive in hibernation at College Station during January 1937, as compared to 1,419 in January 1936. The month was not as cold as last year but the temperature was much more uniform and without the warm spells that brought the weevils out of hibernation in 1936.

PINK BOLLWORM (Pectinophora gossypiella Saund.)

Texas. A. J. Chapman (February 6): At Presidio the cylinder examinations that were made in January to determine the progressive mortality in bolls indicated that there has been a lower mortality than normal. Mortality was over 95 percent in bolls buried and irrigated in December.

COTTON FLEA HOPPER (Psallus sciratus Reut.)

Texas. F. L. Thomas (February 24): Cotton flea hoppers began to hatch on February 17 in weeds that were in hibernation cages. This is more than 2 weeks earlier than usual. A few nymphs were found in the field at College Station on February 23.



H. J. Crawford (February): From 6 plants of Tidestromia lanuginosa collected at Brownsville on February 8, flea hoppers began to emerge on February 9 and 863 nymphs had emerged by the end of the month. The first nymphs were collected in the field on February 25 from horsemint and other plants growing within 4 feet of Tidestromia. Of the 35 nymphs, 4 were fourth instars and the others smaller. None were found on plants 30 feet distant from Tidestromia or on small cotton.

## FOREST AND SHADE - TREE INSECTS

### GYPSY MOTH (Porthetria dispar L.)

Pennsylvania. A. F. Burgess (February 8): On January 20 an infestation was located just outside of the quarantined area in the northeastern part of Clinton Township, Wayne County, Pa. A total of 99 new egg clusters have been located there in growth, most of which is considered unfavorable for the development of gypsy moth infestation. Clinton Township borders Dyberry Township, where an infestation of approximately 325 egg clusters was recently found.

New York. A. F. Burgess (February 8): Intensive scouting and treatment work continued in the region of the Shawangunk infestation in Ulster County, N. Y. Up to January 23 a total of 15,050 egg clusters had been located and destroyed in Putnam Valley, Putnam County, N. Y. The limits of this infestation have not yet been found.

### FALL CANKERWORM (Alsophila pometaria Harr.)

New York. M. Kisliuk (December 15): In a wooded area in Alley Pond Park, Long Island, on December 13 male moths were actively fluttering up and down on the sunny side of several red oak trees. There must have been about 200 adults on about 5 large trees. Closer observation revealed the fact that there were also numerous wingless females slowly moving about in the crevices of the bark. The unusual spectacle of insects of this type mating at this time of the year in this locality was indeed a surprise. (Det. J. F. G. Clarke.)

Northeastern States. E. P. Felt (February 25): Fall cankerworm moths have been crawling during the milder periods of the winter in the northeastern section of the United States. Within the last few days, a living moth was received from Philadelphia, Pa.

### EUROPEAN FRUIT LECANIUM (Lecanium corni Bouche)

Oklahoma. F. A. Fenton (February 23): European fruit lecanium still promises to be a considerable pest to shade trees this year and we have received a number of requests for information on control measures. The insect is still in the overwintering larval stage on the branches of the trees.

LARCH

LARCH CASEBEARER (Coleophora laricella Hbn.)

New Hampshire. L. C. Glover (February 25): The larch casebearer is numerous in Strafford County in southeastern New Hampshire.

OAK

GOLDEN OAK SCALE (Asterolecanium variolosum Ratz.)

New York. R. E. Horsey (February): A young tree of the sargent oak (Quercus sargentii) was found to be badly pitted with this scale at Rochester.

PINE

PITCH-MASS BORER (Parharmonia pini Kellicot)

Georgia. T. O'Neill (January 22): Larvae were attacking large pines in mountainous section of northern Georgia, in Union County. (Det. by C. Heinrich.)

PINE NEEDLE SCALE (Chionaspis pinifoliae Fitch)

New Hampshire. L. C. Glover (February 25): Many mugho pines in Durham, Strafford County, are heavily infested with pine leaf scale.

TUNG-OIL TREE

OBSCURE SCALE (Chrysomphalus obscurus Comst.)

Mississippi. C. Lyle (February 24): C. obscurus on tung at Bendale, on February 15.

I N S E C T S   A F F E C T I N G   G R E E N H O U S E

A N D   O R N A M E N T A L   P L A N T S

GREENHOUSE STONE CRICKET (Tachycines asynamorus Adel.)

North Dakota. F. G. Butcher (February 20): A cricket, T. asynamorus, established in some greenhouses in Fargo, is causing injury to young flax plants. The injury, which occurs only of nights, is characterized by extensive chewing on the cotyledons of the plants just after they emerge from the soil. Older plants are rarely attacked.

A LONG-HORNED BEETLE (Oberea sp.)

Alabama. J. M. Robinson (March 1): A long-horned beetle, Oberea sp., was reported from Talladega on October 29 as attacking Photenia and English laurel.

GREENHOUSE WHITEFLY (Trialeurodes vaporariorum Westw.)

Maryland. E. N. Cory (February 12): Reported attacking house plants at Raspeburg, Baltimore.

MEALYBUGS (Pseudococcus spp.)

Maryland. E. N. Cory (February 12): Reported attacking house plants at Raspeburg, Baltimore.

Tennessee. G. M. Bentley (February 23): Greenhousemen have had considerable trouble with this insect.

SPRUCE GALL APHID (Chermes abietis L.)

Maryland. E. N. Cory (January 22): Reported on evergreens at Baltimore.

CAMPHOR TREE

AVOCADO RED MITE (Paratetranychus yothersi McG.)

Florida. J. R. Watson (February 24): Infestation of Tetranychus yothersi was unusually heavy and most camphor trees have been thoroughly browned.

CEDAR

PALES WEEVIL (Hylobius pales Hbst.)

Mississippi. C. Lyle (February 24): Specimens were collected by Inspector D. W. Grimes on Cedrus deodara plants from six properties at Kosciusko and one at Goodman during the winter.

A WEEVIL (Pachylobius picivorus Germ.)

Mississippi. C. Lyle (February 24): Specimens on Cedrus deodara were collected from properties at Kosciusko and Goodman by Inspector D. W. Grimes on November 28.

DEODAR WEEVIL (Pissodes deodarae Hopk.)

Mississippi. C. Lyle (February 24): A number of infestations on Cedrus deodara were found by Inspector D. W. Grimes during November, December, and January at Kosciusko. At least 10 properties were infested.

LILAC

OYSTERSHELL SCALE (Lepidosaphes ulmi L.)

New York. R. E. Horsey (February): A careful survey in February of an ornamental planting at Rochester, of over 600 lilac shrubs from 4 to 7 feet high, showed heavy infestation. Several shrubs were completely covered. This planting was inspected in the summer of 1935 and the recent survey discloses a gain of over 6 percent in the number of shrubs with scale and a heavier infestation on individual shrubs. This planting was given a dormant spray in the spring of 1936, which did not check the infestation. Another planting of over 500 old shrubs showed only 1 shrub with much infestation and 8 others with a little scale. This planting has had little spraying recently but was carefully sprayed both in summer and early spring and was cleared of most all scale in past years. The scale appears to spread more rapidly on strong vigorous young shrubs than on old rough-barked limbs of large bushes.

LILIES

A BULB MITE (Acarina)

Alabama. J. M. Robinson (March 1): A bulb mite was reported attacking Easter lilies in Mobile on February 23. Associated with this mite were nematodes and a few thrips, the mites being more abundant and destructive apparently than the other pests.

MAGNOLIA

MAGNOLIA SCALE (Neolecanium cornuparvum Thro)

New York. R. E. Horsey (February): A shrub of Magnolia liliflora at Rochester that was frozen nearly to the ground in the cold winter of 1933-34 and has thrown up numerous strong shoots to a height of about 4 feet was found to have these shoots almost covered with the partly grown overwintering scale. Caps of the old, last-year's scale can be found in abundance at the base of this shrub.

ORCHIDS

A THRIPS (Taeniothrips xanthus Williams)

Maryland. E. N. Cory (February 2): This thrips, determined by J. R. Watson, was found on orchids in greenhouse at Jessup, Anne Arundel County. (This thrips has been reported by J. R. Watson on orchids in the West Indies.)

STOCKS

DIAMONDBACK MOTH (Plutella maculipennis Curt.)

Colorado. C. W. Wade (December 15): The diamondback moth was discovered on stocks in a greenhouse at Denver on December 15. It had caused considerable loss to some of the growers. This is the first record of this insect attacking stocks in this immediate locality.



INSECTS ATTACKING MAN AND  
DOMESTIC ANIMALS

MAN

MOSQUITOES (*Culicinae*)

Tennessee. G. M. Bentley (February 23): Insects seen in flight this season; some Culex sp. and Anopheles spp. in entrances to caves.

PUSS CATERPILLAR (Megalopyge opercularis S. & A.)

Alabama. J. M. Robinson (March 1): On October 29 a puss moth larva was sent to this office from Headland. A woman had been to see the doctor as a result of coming in contact with the poisonous bristles of this larva.

SWINE

HOG LOUSE (Haematopinus suis L.)

Tennessee. G. M. Bentley (February 23): Where care has not been taken hog growers are having some trouble with this pest.

HOUSEHOLD AND STORED-PRODUCTS INSECTS

TERMITES (Reticulitermes spp.)

Indiana. J. J. Davis (February 23): Usually we have numerous letters about termites during their swarming period, beginning in January and continuing for several months. This year we have received very few letters indicating swarming.

Michigan. E. I. McDaniel (February 16): Have received first shipment of termites for 1937. They are on the wing in Kalamazoo. This is not to be wondered at, as we have had a remarkably open winter.

Maryland. E. N. Cory (January 21): Observed in the basement of a house at Baltimore.

District of Columbia. F. C. Craighead (February 9): Owing to the unusually warm weather that prevailed throughout January, winged termites swarmed in several buildings in the vicinity of Washington, D. C., during the last few days of the month. This is about 4 weeks earlier than usual.

Tennessee. G. M. Bentley (February 23): The termite problem seems to be a constant one.

Alabama. J. M. Robinson (March 1): Termites were swarming at Auburn on February 20; also at Waverly.



Mississippi. C. Lyle (February 24): On October 20, a correspondent at Lake, in central Mississippi, reported that termites had destroyed his crop of peanuts for the past 5 years. During the winter complaints were received from Newton, McComb, New Albany, Satartia, Kosciusko, Coldwater, Greenwood, Yazoo City, Cleveland, and Marks. State Plant Board inspectors also received many complaints.

Oklahoma. F. A. Fenton (February 23): Usual number of inquiries concerning termite control.

Texas. F. L. Thomas (January 8): Termites reported to be in a dwelling at Big Spring, in Howard County.

#### BOXELDER BUG (Leptocoris trivittatus Say)

Maryland. E. N. Cory (January 26): Found in houses in Salisbury, Wicomico County, and Brooklandville, Baltimore County.

G. Myers (February 26): The boxelder bug has been observed crawling around in a house from time to time since Christmas, at Avery, in Montgomery County.

Alabama. J. M. Robinson (March 1): Large numbers of boxelder bugs appeared at one or two residences in Gadsden the last week of October and first week of November. The county agent reported that the south sides of two or three houses were practically covered with these insects. Apparently they were congregating for hibernation. They were so abundant that they were considered a serious pest by the occupants of the residences.

Utah. G. F. Knowlton (February 19): Boxelder bugs have survived the winter in large numbers and are causing household annoyance in many homes and school buildings in Northern Utah.

#### ANTS (Formicidae)

Maryland. E. N. Cory (January 28): Red ants in the kitchen and flying pavement ants in the basement of a house at Baltimore.

Illinois. W. P. Flint (February 22): The yellow ant (Lasius interjectus Sav) is beginning to swarm in basements and we are now getting frequent reports of its presence. The swarms are often mistaken for termites.

#### RAISIN MOTH (Ephestia figulilella Greg.)

California. H. C. Donohoe (January 13): Samples of prunes were taken on October 10 in Solano County, from fruit boxed over night from the drying yard and from fruit stored for about 3 weeks in an open bin in a shed adjoining the drying yard. In a recent examination 54.9 percent of the boxed and 100 percent of the binned fruit showed feeding injury. These are our first records from a ranch of infestation in prunes after drying.



FIG MOTHS (Ephestia cautella Walk.)

North Carolina. W. D. Reed (January 5): Several moths were collected from a light trap located in a tobacco warehouse in Wilson, which was filled with flue-cured cigarette tobacco. This is the first record of this species from a tobacco warehouse and inspections are being made to determine whether the insect is infesting the tobacco. (Det. by C. Heinrich.)

TISSUE PAPER BUG (Thylocodrias contractus Mots.)

Illinois. C. L. Metcalf (January 15): Two reports of the tissue paper bug (T. contractus), one coming from Chicago and the other from the nearby town of Cicero. The pest was first reported, in Illinois, so far as the correspondent knows, from Chicago in January 1933.

A BORER (Dinoderus minutus F.)

Indiana. J. J. Davis (March 1): A local fruit market handed us some bamboo baskets which were infested with a scolytid larva. These baskets were imported from Japan about a year ago and apparently the insects showed up only recently. (Det. by W. S. Fisher.)

BORERS (Cerambycidae)

Maryland. E. N. Cory (January): Hylotrupes bajulus L. was collected in joists of a house, at Raspeburg, Baltimore, on January 22. Anacomis lignea F. was collected in rafters in a basement in Baltimore on January 30.

WEEVILS (Bruchus spp.)

Tennessee. G. M. Bentley (February 23): The Bruchus sp. attacking the garden-bean seed, soybeans, and cowpeas seems to be about the same as usual, and we have had several requests for remedial measures.

FOREIGN NOTES

Brazil. G. N. Wolcott (January 19): Following an exceptionally long, hot, and unbroken dry season from June to January the initial heavy rain of the wet season, which began on January 17, became a drizzle on the 18th, filling the air with termites, by the 19th brought an invasion of crickets, Gryllus assimilis F., to the most brilliantly lighted section of Belen (Para). Dozens of these crickets flew into every room and as many flew round and round under every street light. Both males and females were present in about equal abundance, and a few were still present 2 weeks later.

Egypt. A. H. Rosenfeld (January 31): A coccid new to Egypt, Lecanium acuminatum Sign., has become established in one of the country's largest mango groves, of about 3,000 trees, in the Delta.